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IS 6338 (1989): Clamping screws (fixtures) [PGD 2: Machine Tool Elements and Holding Devices]



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“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard*  
**CLAMPING SCREWS ( FIXTURES ) —  
SPECIFICATION**  
*( First Revision )*

भारतीय मानक  
कसने वाले पेच ( फिक्सचर्स )  
( पहला पुनरीक्षण )

UDC 621-229.312.2

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

## **FOREWORD**

This Indian Standard ( First Revision ) was adopted by the Bureau of Indian Standards on 4 August 1989 after the draft finalized by the Machine Tool Elements and Workholding Devices Sectional Committee, had been approved by the Production Engineering Division Council.

This standard was first issued in 1971. In order to modify the dimensions, based on the experience gained in this field for so many years, this standard has been taken up for revision.

While revising this standard, each type of clamping screw has been split into two, based on the use of either snap ring or cylindrical pin. Figures have accordingly been modified. Dimensions have been rationalised. Finish and marking clauses have been included.

While formulating this standard considerable assistance has been taken from the data supplied by the users of the product and DIN 6332-1981 'Grub screws with thrust point', issued by Deutsche Institute für Normung.

# Indian Standard

## CLAMPING SCREWS ( FIXTURES ) — SPECIFICATION

### ( *First Revision* )

**1 SCOPE**

**1.1** This standard specifies the dimensions and other requirements for clamping screws ( fixtures ) assemblies used in jigs and fixtures for holding work pieces in places when they are being machined.

**2 REFERENCES**

**2.1** The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
IS 2393 : 1980	Cylindrical pins ( <i>second revision</i> )
IS 2804 : 1964	Dimensions for palm grips
IS 2890 : 1983	Taper handles for machine tools ( <i>first revision</i> )
IS 2909 : 1964	Dimensions for star grips
IS 2636 : 1972	Wing nuts ( <i>first revision</i> )
IS 6335 : 1971	Knurled thumb nuts ( fixtures )
IS 6336 : 1989	Screws for thrust pads ( fixtures )

*IS No.**Title*

IS 6337 : 1989	Thrust pads ( fixtures ) ( <i>first revision</i> )
IS 12525 : 1989	Snap rings

**3 TYPE****3.1 Clamping Screws with Palm Grip**

Type A1, within thrust-pad and snap ring.  
Type B1, with thrust-pad and cylindrical pin.

**3.2 Clamping Screws with Star Grip**

Type A2, with thrust-pad and snap ring.  
Type B2, with thrust-pad and cylindrical pin.

**3.3 Clamping Screws with Wing Nuts**

Type A3, with thrust-pad and snap ring.  
Type B3, with thrust-pad and cylindrical pin.

**3.4 Clamping Screws with Knurled Thumb Nut**

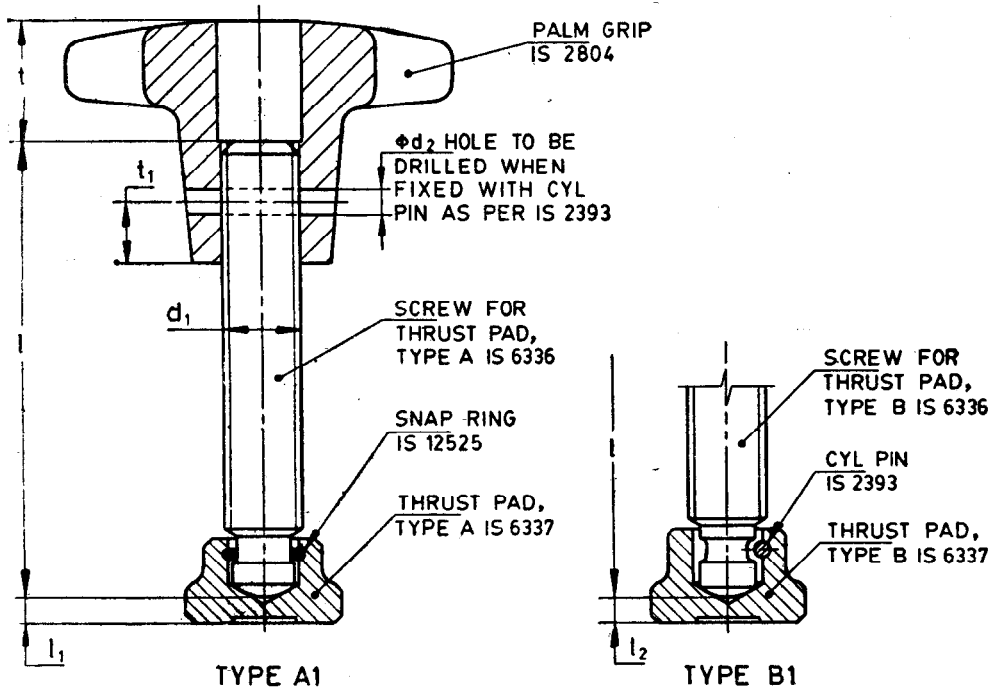
Type A4, with thrust-pad and snap ring.  
Type B4, with thrust-pad and cylindrical pin.

**3.5 Clamping Screws with Taper Handles**

Type A5, with thrust-pad and snap ring.  
Type B5, with thrust-pad and cylindrical pin.

## 4 DIMENSIONS

## 4.1 Clamping Screws with Palm Grip, Type A1 and B1



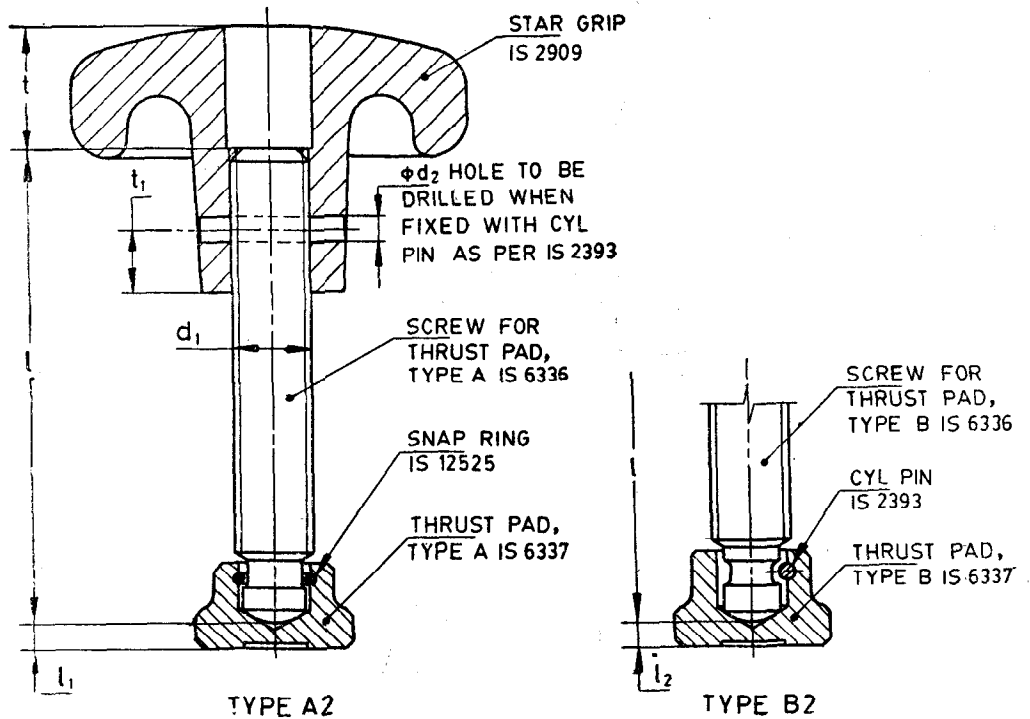
All dimensions in millimetres.

Screw for Thrust Pad		Palm Grip	Thrust Pad	$l_1$ ≈	$l_2$ ≈	$t$	$d_2$ H 7	$t_1$	Cylindrical Pin		Snap Ring*
$d_1$	$l$								For Fixing Palm Grip	For Fixing Thrust Pad	
M6	30, 50	C 32	12	2.2	2.1	10	2.5	6	2.5 m 6 × 14	1.5 m 6 × 8	4.5
M8	40, 60	C 40	16	3.0	2.4	12	3	7	3 m 6 × 16	2 m 6 × 8	6
M10	60, 80	C 50	20	3.6	3.8	16	3	8	3 m 6 × 20	2 m 6 × 12	8
M12	60, 80, 100	C 63	25	4.5	4.2	20	4	10	4 m 6 × 20	3 m 6 × 14	8

NOTE — Instead of cylindrical pins for fixing palm grip, it is permissible to use other equivalent fixing methods which shall ensure positive fixing.

\*For snap rings, refer IS 12525 : 1989.

## 4.2 Clamping Screws with Star Grips, Type A2 and B2



All dimensions in millimetres.

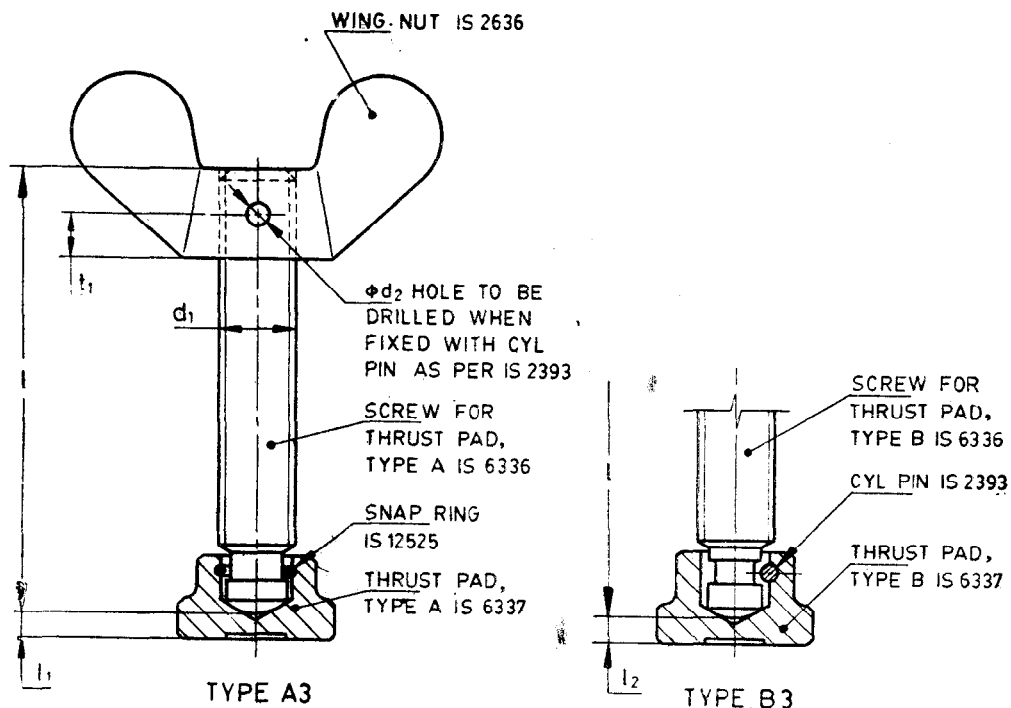
Screw for Thrust Pad		Star Grip	Thrust Pad	$l_1$	$l_2$	$t$	$d_2$	$t_1$	Cylindrical Pin		Snap Ring*
$d_1$	$l$								For Fixing Star Grip	For Fixing Thrust Pad	
M6	30, 50	C 32	12	2.2	2.1	10	2.5	6	2.5 m 6 $\times$ 14	1.5 m 6 $\times$ 8	4.5
M8	40, 60	C 40	16	3	2.4	12	3	7	3 m 6 $\times$ 16	2 m 6 $\times$ 8	6
M10	60, 80	C 50	20	3.6	3.8	16	3	8	3 m 6 $\times$ 20	2 m 6 $\times$ 12	8
M12	60, 80, 100	C 63	25	4.5	4.2	20	4	10	4 m 6 $\times$ 20	3 m 6 $\times$ 14	8

NOTE — Instead of cylindrical pins for fixing star grip, it is permissible to use other equivalent fixing methods which shall ensure positive fixing.

\*For snap ring, refer IS 12525 : 1989.



## 4.3 Clamping Screws with Wing Nuts, Type A3 and B3



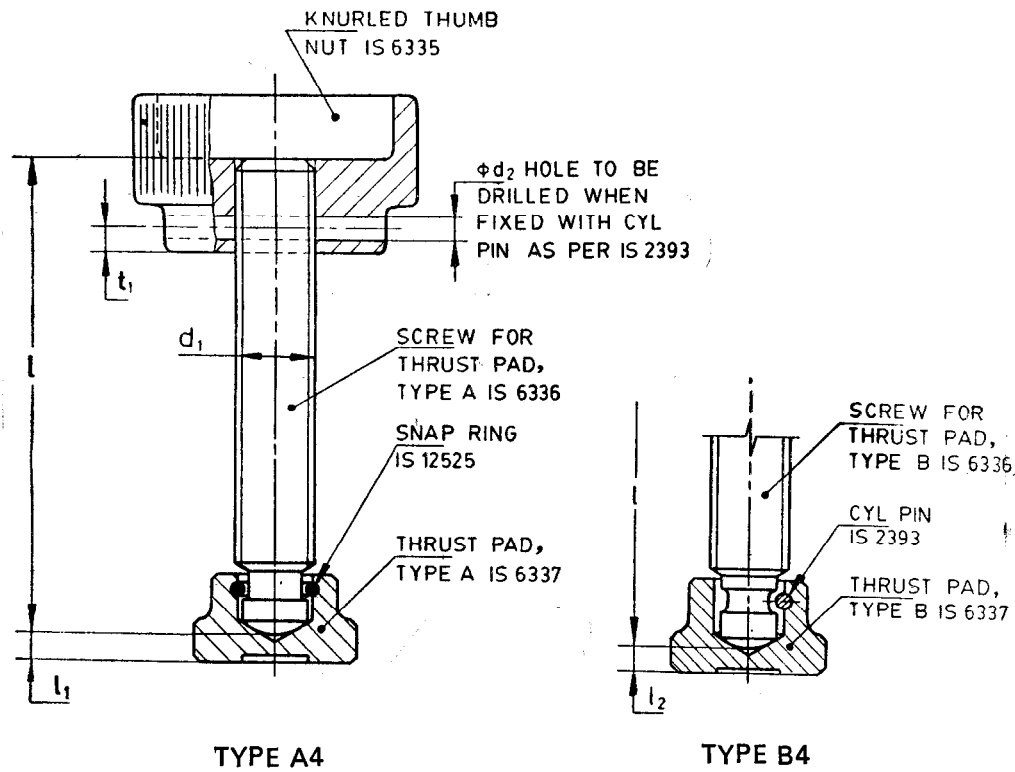
All dimensions in millimetres.

Screw for Thrust Pad		Wing Nut	Thrust Pad	$l_1$	$l_2$	$d_2$	$t_1$	Cylindrical Pin		Snap Ring*
$d_1$	$l$							For Fixing Wing Nut	For Fixing Thrust Pad	
M6	30, 50	M6 B-4D	12	2.2	2.1	2.5	4	2.5 m 6 × 12	1.5 m 6 × 8	4.5
M8	40, 60	M8 B-4D	16	3	2.4	3	5	3 m 6 × 14	2 m 6 × 8	6
M10	60, 80	M10 B-4D	20	3.6	3.8	3	6	3 m 6 × 20	2 m 6 × 12	8

NOTE — Instead of cylindrical pins for fixing wing nuts, it is permissible to use other equivalent fixing methods which shall ensure positive fixing.

\*For snap rings, refer IS 12525 : 1989.

4.4 Clamping Screws with Knurled Thumb Nuts, Type A4 and B4



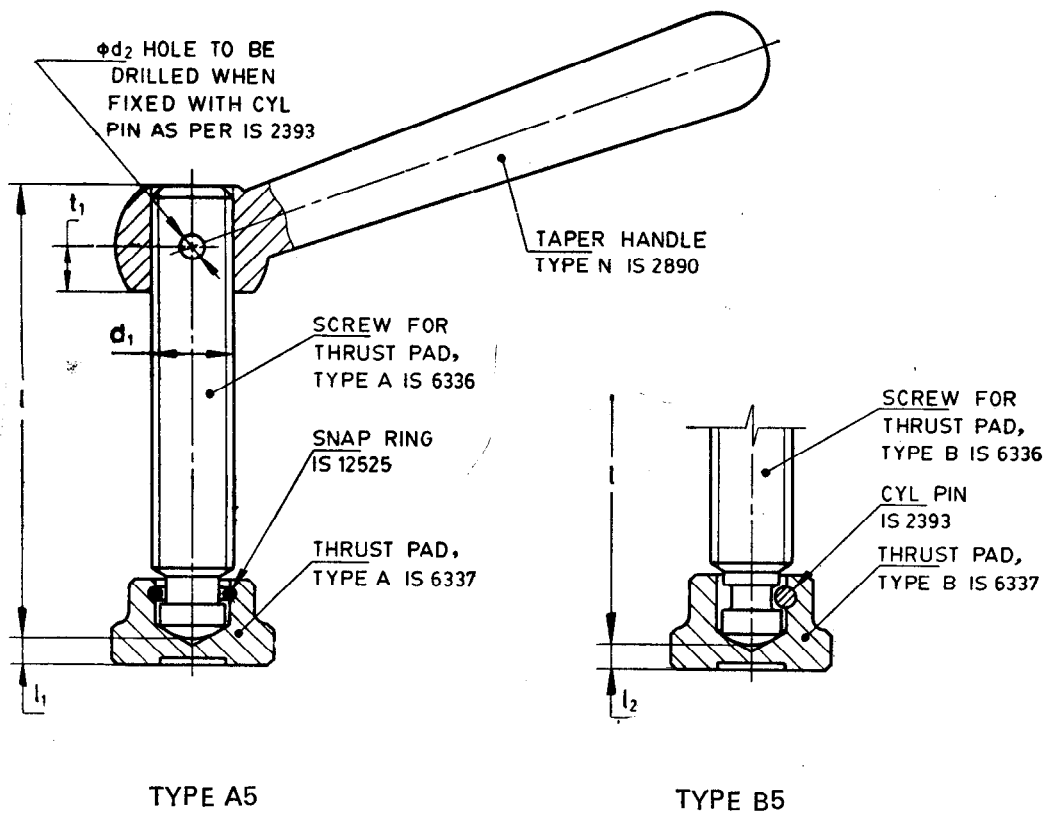
All dimensions in millimetres.

Screw for Thrust Pad		Thumb Knurled Nut	Thrust Pad	$l_1$	$l_2$	$d_2$	$t_1$	Cylindrical Pin		Snap Ring*
$d_1$	$l$							For Fixing Thumb Knurled Nut	For Fixing Thrust Pad	
M6	30, 50	M 6	12	2.2	2.1	1.6	2.5	1.6 m 6 $\times$ 16	1.5 m 6 $\times$ 8	4.5
M8	40, 63	M 8	16	3	2.4	2	3	2 m 6 $\times$ 20	2 m 6 $\times$ 8	6
M10	60, 80	M 10	20	3.6	3.8	3	3	3 m 6 $\times$ 25	2 m 6 $\times$ 12	8

NOTE — Instead of cylindrical pins for fixing thumb knurled nuts, it is permissible to use other equivalent fixing methods which shall ensure positive fixing.

\*For snap ring, refer IS 12525 : 1989.

4.5 Clamping Screws with Taper Handles, Types A5 and B5



All dimensions in millimetres.

Screw for Thrust Pad		Taper Handle	Thrust Pad	$l_1$	$l_2$	Cylindrical Pin		Snap Ring*	$t_1$
$d_1$	$l$					For Fixing Taper Handle	For Fixing Thrust Pad		
M10	60, 80	80	20	3.6	3.8	3 m 6 × 20	2 m 6 × 12	8	6
M12	60, 80, 100	100	25	4.5	4.2	4 m 6 × 30	3 m 6 × 14	8	7.5
M16	80, 100, 125	125	32	5.3	4.7	4 m 6 × 35	3 m 6 × 16	12	10
M20	100, 125, 150	160	40	5.6	6.5	5 m 6 × 45	4 m 6 × 20	15.5	12.5

NOTE — Instead of cylindrical pins for fixing taper handles, it is permissible to use other equivalent fixing methods which shall ensure positive fixing.

\*For snap rings, refer IS 12525 : 1989.

**5 DESIGNATION**

**5.1** Clamping screw shall be designated by its commonly used name, type, screw size ( $d_1 \times l$ ) and number of this standard.

**Example:**

Clamping screw having palm grip with snap ring assembly that is Type A<sub>1</sub>, having screw size  $d_1 \times l = M6 \times 30$  shall be designated as:

Clamping Screw—A<sub>1</sub>—M6×30—IS 6338

**6 FINISH**

**6.1** Clamping screws shall be free from cracks,

burrs, pits and other manufacturing defects.

**7 PRESERVATION AND PACKING**

**7.1** A suitable anti-corrosive surface treatment shall be given to clamping screws.

**7.2** Clamping screws shall be packed in accordance with the best trade practices.

**8 MARKING**

**8.1** Clamping screws shall be marked at an appropriate place, the manufacturer's name, initials or trade mark.

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Doc : No. PED 2 ( 4334 )

#### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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फोन: 3310131/313

भारतीय मानक ब्यूरो

हमारा संदर्भ: पब-PE[6338]89  
विषय: भारतीय मानकों का वितरण

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1990-05-10

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6338-1989

की छपी अग्रिम प्रति की जांच कराई गई  
और ठीक पाई गई। हमने इसी क्रम संख्या दिनांक-----के पत्र में  
जो सुधार लिखे थे आशा है वे सभी प्रतियों में कर लिए होंगे। §कृपया शेष-375  
प्रतियां हमारे मुख्यालय, नई दिल्ली के वितरण अनुभाग को शीघ्र ही भेजें।

2. आपके मार्गदर्शन और रिकार्ड के लिए एक प्रमाणित अग्रिम प्रति वापस को जा  
रही है। कृपया यह सुनिश्चित करें कि पृष्ठों की संख्या और क्रम, शुद्धियों, इत्यादि  
के संबंध में शेष प्रतियां इस प्रमाणित अग्रिम प्रति के अनुरूप हों।

संलग्न: उपरिलिखित

प्रतिलिपि प्रेषित:

1. अनु. अधि. §विक्रय§

2. अनु. अधि. §वितरण§

भवदीय,  
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§अगली आवश्यक कार्यवाही के लिए कृपया  
राशि सप्लाई को अग्रिम प्रतियों के  
अनुसार जांच करें।§